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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/401,490	09/22/1999	SATOSHI WATANABE	KOJIM-289	4743

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EXAMINER

TRAN, BINH X

ART UNIT PAPER NUMBER

1765

DATE MAILED: 05/21/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/401,490

Applicant(s)

WATANABE ET AL.

Examiner

Binh X Tran

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-19 is/are pending in the application.
- 4a) Of the above claim(s) 4, 8 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 7 and 10-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-4 and 6-19 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is responsive to the amendment after final filed 2-21-2003. The amendment has been entered. The final rejection in the previous office action has been withdrawn. The applicants only have to reply to this new non-final rejection.

Claim Rejections - 35 USC § 102/103

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 6, 19 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kobayashi et al. (US 6,136,500).

Respect to claim 1, Kobayashi disclose a resist composition comprising:

a base polymer (col. 5 lines 40-67, col. 7 lines 37-41, col. 11 lines 53-55).

a fluorochemical surfactant (such as SURFON trademark of Asahi Glass) (See col. 21 line 52 to col. 22 line 10).

Kobayashi does not explicitly disclose that the fluorochemical surfactant functions to reduce the contact angle at the interface between the surface of the resist composition coated on a substrate and water or aqueous base developer as the amount of the fluorochemical surfactant increase. However, since Kobayashi teaches the same composition, under the principle of inherency the invention is considered to be anticipated by Kobayashi.

In the alternative, it would be obvious to reduce the contact angle at the interface between the surface of the resist composition coated on a substrate and water or aqueous base developer as the amount of the fluorochemical surfactant increase because this would lower the surface tension.

Respect to claim 6, Kobayashi discloses a composition comprising:

a base resin of an alkali-insoluble or alkali low-soluble resin (i.e., scary soluble resin) having acidic functional groups protected with acid-decomposable groups (read on "acid-labile groups") wherein the resin become alkali soluble when the acid-decomposable groups are eliminated; (col. 3 lines 24-52, col. 4);

a photo-acid generator capable of generating acid upon exposure to deep UV, X-rays or electron beam (col. 12 lines 49-65, col. 30 lines 2-6);

a fluorochemical surfactant (such as SURFON trademark of Asahi Glass) (See col. 21 line 52 to col. 22 line 10).

Kobayashi does not explicitly disclose that the fluorochemical surfactant functions to reduce the contact angle at the interface between the surface of the resist composition coated on a substrate and water or aqueous base developer as the amount of the fluorochemical surfactant increase. However, since Kobayashi teaches the same composition, under the principle of inherency the invention is considered to be anticipated by Kobayashi.

In the alternative, it would be obvious to reduce the contact angle at the interface between the surface of the resist composition coated on a substrate and water or aqueous base developer as the amount of the fluorochemical surfactant increase because this would lower the surface tension.

According to MPEP 2112, "Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection".

Respect to claim 3, Kobayashi discloses exposing the composition to x-rays (col. 30 lines 1-6). Respect to claim 19, Kobayashi discloses the base polymer is polyhydroxystyrene (col. 11 lines 53-55).

Claim Rejections - 35 USC § 103

5. Claims 2, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi in view of Seimi Chemical Co., Ltd Product.

Kobayashi discloses the use of using SURFLON (fluorinated surfactant made by Asahi Glass) in his composition. However, Kobayashi fails to disclose the specific kind of SURFLON surfactant. Seimi Chemical Co., Ltd Product discloses a various kind of SURFLON surfactant make by Asahi Glass and Seimi Chemical Co., Ltd including KH-40 surfactant (trademark). It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Kobayashi in view of Seimi Chemical Co., Ltd. Product by using various kind of KH surfactant including KH-40 because it is readily available. Further, these specific surfactants provide many unmatched properties and performances not available with hydrocarbon surfactant.

Seimi Chemical Co., Ltd. Product does not explicitly disclose the specific formula structure of its KH surfactant. However, it is well know in the art as well as admitted by applicants in the specification (page 4) that the KH-40 surfactant has the formula structure of claims 2 and 7.

6. Claim 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi in view of Nishi et al. (US 5,695,906).

Respect to claim 10, Kobayashi disclose the composition has novolak resin (col. 11 lines 52-53) and fluorochemical surfactant (discuss above). Kobayashi fails to disclose a naphtoquinonediazide compound. In a photoresist composition, Nishi et al. discloses a composition having naphtoquinonediazide compound (col. 7 lines 5-30) as

well as novolak resin. It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Kobayashi in view of Nishi by using a naphthoquinonediazide because it is capable of dissolving the reactants in the presence of basic catalyst at room temperature.

7. Claim 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi and Nishi in view of Seimi Chemical Co., Ltd Product.

Kobayashi discloses the use of using SURFLON (fluorinated surfactant made by Asahi Glass) in his composition. However, Kobayashi fails to disclose the specific kind of SURFLON surfactant. Seimi Chemical Co., Ltd Product discloses a various kind of SURFLON surfactant made by Asahi Glass and Seimi Chemical Co., Ltd including KH-40 surfactant (trademark). It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Kobayashi in view of Seimi Chemical Co., Ltd. by using various kind of KH surfactant including KH-40 because it is readily available. Further, these specific surfactants provide many unmatched properties and performances not available with hydrocarbon surfactant.

Seimi Chemical Co., Ltd. *Product* does not explicitly disclose the specific formula structure of its KH-40 surfactant. However, it is well known in the art as well as admitted by applicants in the specification (page 4) that the KH-40 surfactant (trademark) has the formula structure of claims 11-16.

8. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. in view of Schacht et al. (US 5,849,808)

Claims 17-18 differ from Kobayashi by the specific concentration of fluorochemical surfactant. In a photoresist composition, Schacht discloses the use of fluorochemical surfactant. Schacht further teaches the concentration of the surfactant is a result effective variable by varying it from 0.01 % to 0.1 % by weight (col. 11 lines. 20-32; Note 0.01 % = 100 parts by weight by million, within applicants' range). The result effective variable is commonly determined by routine experiment. The process of conducting routine experiments so as to produce an expected result is obvious to one of ordinary skill in the art. Hence, it would have been obvious to one having ordinary skill in the art, at the time of invention to modify Kobayashi in view of Schacht by perform routine experiment to obtain optimal concentration of fluorochemical surfactant concentration as an expected result

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Seimi Chemical Co., Ltd History discloses that SURFLON (fluorochemical surfactant) was first produced in 1979.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh X Tran whose telephone number is (703) 308-1867. The examiner can normally be reached on Monday-Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin L Utech can be reached on (703) 308-3836. The fax phone

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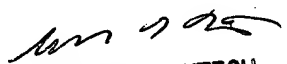
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numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Binh X. Tran
May 16, 2003


BENJAMIN L. UTECH
SUPERVISORY PATENT EXAMINER
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